

# Appendix A

Depositional Area

**FINAL**

**POST-REMOVAL SITE CONTROL PLAN  
DEPOSITIONAL AREA  
TALACHE MINE TAILINGS SITE,  
ATLANTA, IDAHO**

October 2004

*Prepared for:*

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## TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES .....	ii
LIST OF FIGURES .....	ii
LIST OF APPENDICES .....	ii
1.0 INTRODUCTION .....	1
1.1 Site Removal Actions .....	1
1.2 Purpose and Scope of PRSC Plan.....	2
1.3 Site Control Responsibility and Property/Access Issues .....	3
1.4 Qualifications of Inspection Personnel .....	3
2.0 DEPOSITIONAL REMOVAL AREA INSPECTIONS.....	4
2.1 Inspection Frequencies .....	4
2.2 Residential Area Inspections.....	5
2.2.1 Barriers and Vegetative Cover.....	5
2.2.2 Erosion Controls .....	6
2.2.3 Erosion.....	6
2.2.4 Access to the Site.....	7
2.3 Recreational Area Inspections .....	7
2.3.1 Vegetative Cover .....	7
2.3.2 Erosion Controls .....	8
2.3.3 Erosion.....	9
2.3.4 Access Control to the Site.....	9
2.4 Stream Bank Stabilization .....	10
3.0 MAINTENANCE AND CONTINGENCY PLANS .....	11
3.1 Recreational Areas .....	11
3.2 Residential Areas .....	12
3.3 Stream Bank Areas .....	12
4.0 INSPECTION AND MAINTENANCE REPORTING PROCEDURES .....	13
4.1 Inspection and Maintenance Field Documentation.....	13
4.2 Inspection and Maintenance Reporting .....	13
5.0 REFERENCES .....	15

## **LIST OF TABLES**

<u>Table</u>	<u>Title</u>
2-1	Depositional Area Inspection and Recording Frequency

## **LIST OF FIGURES**

<u>Figure</u>	<u>Title</u>
1	Vicinity Map
2	Depositional Area - Revegetation, Access Control, and Erosion Control

## **LIST OF AS-BUILT DRAWINGS**

<u>Drawing</u>	<u>Title</u>
066240-C20	Depositional Area Removal Plan
066240-C21	Depositional Area - Removal Plan at Residential Areas
066240-C22	Stream Bank Erosion Control – Plan and Sections

## **LIST OF APPENDICES**

<u>Appendix</u>	<u>Title</u>
A	Inspection and Maintenance Forms
B	Standard Operating Procedure for Vegetation Cover Measurement

## **1.0 INTRODUCTION**

This Post-Removal Site Control (PRSC) Plan has been prepared on behalf of the St. Joe Minerals Corporation (“St. Joe”) and Monarch Greenback, LLC (“Monarch”) for the Depositional Area of the Talache Mine Tailings Site (Site) located near Atlanta, Idaho (Figure 1). This PRSC Plan summarizes the inspection and maintenance activities for the Depositional Area as required by the Statement of Work issued by the U.S. Environmental Protection Agency (EPA, 2001). The removal action was required by the Administrative Order on Consent (AOC) for the Depositional Area (EPA, 2002).

Two tailings piles (the Upper and Lower Tailings Piles, or UTP and LTP, respectively) are present at the Site. On May 15, 1997, the UTP embankment failed, releasing tailings to adjacent areas. This event is hereinafter referenced as the “1997 release.” Time-critical removal actions were performed at the Tailings Piles area in 1997 through 1999 by Monarch to stabilize the release area and to relocate some of the dispersed tailings. Non-time-critical removal actions were begun at the Tailings Piles Area in 2000 by St. Joe and Monarch, and were substantially completed in 2002. The 1997 release resulted in tailings deposition in the area below the Talache Mine Tailings Piles. This area, known as the Depositional Area, became the focus of an additional non-time critical removal action performed in 2002.

All non-time critical removal actions were performed in accordance with various EPA-approved final design documents (MFG, 2000, 2002a and 2002b). The Site has been divided into two general areas for documentation purposes: 1) the Tailings Piles Area and 2) the Depositional Area downstream of the Tailings Piles. This PRSC Plan addresses the Depositional Area and is a companion to the Tailings Piles Area PRSC Plan that is included in the first part of this document.

### **1.1 Site Removal Actions**

The removal actions at the Depositional Area in 2002 were performed to address risks associated with unacceptably high arsenic concentrations in soil as well as to provide stabilization and closure of the Site. These actions consisted of the following:

- Identification and modification, as necessary, of the design removal area boundaries within the Depositional Area;
- Delineation of areas to be used for residential purposes and for recreational purposes, in consultation with the land owner;

- Excavation of tailings and associated arsenic-contaminated soils from the defined removal areas (termed residential or recreational areas based on future land use);
- Relocation of excavated arsenic-contaminated tailings and soils from the removal areas to the LTP;
- Diagnostic screening to guide the removal actions and compliance sampling to demonstrate that the removal actions achieved the residential or recreational removal goals (RG) for the designated areas (360 and 36 mg/kg arsenic for recreational and residential areas, respectively);
- Import and testing of clean backfill material;
- Placement of clean backfill, where required, to promote positive drainage, eliminate ponding, and cover tree roots;
- Placement of a geotextile marker and a 12-inch thick clean soil barrier in a portion of one residential area where the residential RG was not met by the prescribed excavation;
- Seeding and mulching of the removal areas; and
- Improvement of stream bank conditions in stream channel segments outside of the removal areas along Montezuma Creek, Unnamed Creek, and Powerhouse Flume.

Documentation of removal actions performed at the Depositional Area in 2002 is provided in the Depositional Area Construction Completion Report (CCR; MFG, 2003).

## **1.2 Purpose and Scope of PRSC Plan**

This PRSC Plan is intended to guide operations and maintenance (O&M) activities associated with areas addressed under the Depositional Area removal action. The O&M requirements include inspection, monitoring, and maintenance procedures necessary to provide for long-term stability and integrity of the removal actions at the Depositional Area and to provide for protection of surface water at or adjacent to the Depositional Area. Other portions of the Depositional Area, previously addressed in the 1997-1999 time-critical removal actions, will be observed to track and use changes and other occurrences that could affect the areas addressed under those removal actions. Post-removal contingency plans are also included that describe emergency management procedures, as may occasionally be necessary. Post-removal site control and management will be performed in accordance with Section 300.415(k) of the National Contingency Plan (NCP) and the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.2-02.

This PRSC Plan for the Depositional Area includes descriptions of the inspection procedures (Section 2), maintenance and contingency plans (Section 3), and inspection and maintenance reporting procedures (Section 4). As-built drawings for the Depositional Area are included as necessary to describe and support the O&M procedures. Appendices include the inspection and maintenance forms (Appendix A) and the Standard Operating Procedure for Vegetation Cover Measurements (Appendix B).

The operating plan for the Depositional Area, including its residential and recreational areas, will be evaluated as post-removal site control is implemented in order to optimize their operations. Such optimization will be conducted opportunistically and in consultation with EPA, until the final configuration of each component of the Depositional Area closure is agreed upon and achieved. Once achieved, operation and maintenance of the Depositional Area closure will maintain the agreed-upon configuration.

### **1.3 Site Control Responsibility and Property/Access Issues**

At the time of writing, negotiations were underway between St. Joe and Monarch Greenback, LLC with respect to Monarch's implementing this PRSC Plan. If these negotiations are successful, Monarch will assume such responsibility. EPA will have oversight responsibilities for all post-removal site operations and maintenance procedures

The Depositional Area is located primarily on property owned by GreenTree, Inc., however a small part of the Depositional Area is located on public land administered by the US Forest Service. Individual lots in the Residential Area portion of the Depositional Area may be owned by individuals at some point in the future. Access to the various residential lots will be from existing or possibly new access points along Forest Service Road 268 and will require notification/approval of the appropriate land owner(s).

### **1.4 Qualifications of Inspection Personnel**

Regular inspections and monitoring of the Depositional Area will be performed by personnel experienced in the work to be performed such as erosion and vegetation assessments. Surveying of property lines and plats for residential lots or changes in site ownership will be performed by a Professional Land Surveyor licensed in Idaho.

## **2.0 DEPOSITIONAL REMOVAL AREA INSPECTIONS**

This section describes general inspection of the Depositional Area. The inspections will specifically focus on the areas addressed under the response action completed in 2002, though other portions of the Depositional Area that were addressed during the 1997-1999 time-critical removal actions will also be informally observed. The areas addressed under the 2002 removal action are shown on Drawing 6240-C20. Residential decision units (residential areas) and the recreational decision units (recreational areas) within the area addressed during the 2002 removal action are shown on Drawing 6240-C21. In addition, the three areas that required stream bank repairs and stabilization will be inspected. These stream bank areas include Montezuma Creek, Unnamed Creek and Power House Flume, as indicated on Drawing 6240-C22. The inspection frequencies, features and conditions of each area to be inspected are described in this section. Other stream bank areas within the Depositional Area will also be inspected for signs of excessive erosion that could result in unacceptable impacts to surface water quality.

### **2.1 Inspection Frequencies**

Each inspection will consist of a Site visit and walk-through, completion of inspection and maintenance forms, and photographic documentation of Site conditions. The inspection and recording frequency for the Depositional Area is provided in Table 2-1. This table references the applicable forms for specific areas that will be completed during the inspection (Appendix A).

The Depositional Area inspection frequency will be twice per year for the first two years following the completion of the response action activities. The semi-annual inspections will be performed during the spring (high-flow) and late summer/fall (low-flow) periods. The high-flow runoff season is assumed to occur during late May and early June in the Atlanta area and the low-flow season is assumed to occur during August or September. Informal inspections have been conducted in the Spring of 2003 and 2004. Two inspections in the year 2005 are anticipated to occur during the same time periods for means of comparison. Inspections will also be performed following local forest fires in the project area, significant upgradient logging or nearby land development that may impact the Depositional Area reclamation, as well as storms which produce flood damage adjacent to Montezuma Creek of the Middle Fork Boise River.

Following the first two years of inspection, if no significant problems are noted and vegetation is well established as defined in Appendix B, Vegetation Cover Measurement Standard Operating Procedure, the inspection frequency will be reduced to one inspection per year. Similar to the semi-annual inspection, an optimal time to observe Site conditions will be just after the spring runoff that occurs in late May or early June. The inspections of the Depositional Area are to be performed in conjunction with the scheduled inspections of the Tailings Piles Area as described in the Tailing Piles PRSC Plan (MFG, 2004).

## **2.2 Residential Area Inspections**

The residential area inspection will be documented with the completion of inspection Forms 1 and 2 provided in Appendix A. The residential areas are indicated on Drawing 6240-C21. The inspections of Residential Areas will be performed at the frequency and duration shown on Table 2-1.

### **2.2.1 Barriers and Vegetative Cover**

The residential areas include portions of Lots 2, 3, 4, 5, and 10; and all of Lots 6 and 9 (see Drawing 6240-C21). As shown, a portion of Lot 5 required a geotextile visual marker with a 12-inch thick growth medium barrier placed over the marker because the residential RG could not be achieved in this small area through material removal only without creating an undesirable depression.

All of the residential areas will be inspected for signs of erosion and other disruptions. In the event that signs of excavation, construction, removal or dumping of soils are apparent, the records will reflect the location and relevant lot number. Additional information, such as the extent and volume of excavation, will be sketched in the field notes. It is noted that, with the exception of a portion of Lot 5, any disruptions to the surface of the residential areas should not result in increased risk because the residential RG for arsenic was achieved by removing tailings and soil that exceeded that RG.

The portion of Lot 5 that was covered with geotextile and clean backfill will be inspected for signs of disturbance to the barrier and underlying geotextile marker. The inspection will be recorded on Form 2 (Appendix A) and the area will be photographed. The thickness of the clean soil cover may be checked if there are indications that soil has been removed from the area. This would be implemented by carefully digging through the cover until the geotextile is reached, and measuring the thickness of the soil

cover. Any such excavations that are made will be documented in the field inspection forms and will also be photographed.

Until residential development occurs, the vegetative cover of the residential areas addressed during the 2002 removal action will be inspected by the Point-Intercept Method (Appendix B) to assess progress toward vegetative success, as defined by the Idaho Administrative Code (IDAPA) 20, Title 03, Chapter 02, Section 140. During the inspection, selected areas will be marked and recorded with approximate area measurements and photographs will be obtained. These areas may include, but are not limited to, an area in the revegetated portions of Lots 2, 3, and 4; and an area within the revegetated portions of Lots 9 and 10. The vegetative cover assessments will be made during the inspections beginning in 2004 and annually thereafter until vegetation success is imminent or achieved, as established in consultation with EPA. Following residential development, revegetation of the residential areas, and the success of that revegetation, will be the responsibility of the property owner.

The site shall be inspected two times per year for a period of two years for the occurrence of unwanted or noxious vegetation. After a two-year period, the site will be inspected annually for signs of undesirable vegetation establishment. Should a site inspection reveal that undesirable vegetation, such as noxious weeds, are establishing on the site, appropriate action will be taken to eradicate such vegetation.

### **2.2.2 Erosion Controls**

Erosion controls were placed in both the residential and recreational areas and include riprap-lined channels, coconut fiber blanket, straw wattles, and silt fencing (Figure 2). The erosion controls placed in the residential removal areas include a segment of the rip-rap lined channel that intersects Lots 2, 3, and 4. This channel segment is approximately 500 feet long. Discussion of inspection of the riprap-lined channel through the residential area and the other erosion controls placed in the recreational areas is provided in Section 2.3.

### **2.2.3 Erosion**

Indications of any significant erosion of the residential areas, or deposition of eroded material onto the residential areas, will be noted on the relevant inspection form provided in Appendix A. Signs of ponding or standing water, rills, channelization, or soil sloughing and/or areas that lack vegetation will be

noted on field forms as necessary. The steeper gradient areas will be observed for erosion and structural erosion controls described above will be inspected for displacement or erosion adjacent to the structural controls.

#### **2.2.4 Access to the Site**

Access to the Site is controlled by gates, fencing, and by barriers in key areas along USFS Road 268. The locations of the access controls are documented in the CCR (MFG, 2003a) and are shown on Figure 2. The access controls are used to limit public access to the Site and possible damage to both the residential and recreational areas. The areas most vulnerable to public access are areas adjacent to USFS Road 268 that include residential Lots 9 and 10 and a portion of the recreational area. Any disturbance or damage to these access controls will be noted on the inspection forms, specifically any signs of damage or vandalism.

### **2.3 Recreational Area Inspections**

The recreational area inspection will be documented with the completion of inspection Form 3 provided in Appendix A. The recreational areas are indicated on Drawing 6240-C21. As indicated on Drawing 6240-C20, recreational Area 3 near USFS Road 205 will also require inspection. The recreational RG was achieved in the recreational areas by material removal; clean soil barriers were not needed to achieve the recreational RG. Inspections in the recreational areas will focus on vegetation conditions, status of erosion controls, signs of significant erosion, and site access. Recreational Area inspections will be performed at the frequency and duration shown on Table 2-1.

#### **2.3.1 Vegetative Cover**

The vegetative cover in the recreational areas will be inspected by the Point-Intercept Method (Appendix B) to assess progress toward vegetation success, as set forth in IDAPA 20.03.20.140, as discussed in Section 2.2.1. Three separate recreational locations will be measured for vegetative cover. These locations may include areas within the north end of the recreational area, or north of Lots 2, 3, and 4; an area in the south end of the recreational area, or south of Lot 6 and west of Lot 10; and a portion of Area 3 along USFS Road 205 (Figure 2; Drawing 6240-C20). The vegetative cover assessments will be

made during the spring inspections beginning in 2004 and annually thereafter until vegetation success is imminent or achieved, as established in consultation with EPA.

The current land use shall be noted along with any impacts to backfilled areas, revegetated cover and drainage improvements that were made during the removal action. Any recreational use that may be damaging to the Site will be noted, including signs of motorized vehicle use that create disturbances to new vegetation and drainage areas. In addition, signs of camping, fires, and other use that may affect drainage or vegetation in the area will be recorded on inspection forms and noted on a Site map. Signs of unnecessary disposal of trash or debris, logging or other types of activities that may be damaging to the removal action and corresponding revegetation will also be noted. Observations regarding vegetation in the recreational areas will be documented on the Inspection Forms provided in Appendix A.

### **2.3.2 Erosion Controls**

The erosion controls placed in the recreational removal areas include riprap-lined channels, coconut fiber blanket, straw wattles, and silt fencing. These erosion control features are noted on Figure 2.

Riprap was placed in three drainage/swale locations totaling approximately 1,250 linear feet. The recreational area between Lots 5 and 6 has two small drainages that intersect approximately 100 feet north of Lot 6. The drainages have a gradient between 5 and 10 percent in this area and the riprap was placed over a geotextile to provide erosion control and channel stabilization. The third location in which riprap was placed is across the north end of residential Lots 2, 3, and 4. This drainage has a more gradual gradient of approximately 2 to 5 percent. These areas will be inspected for displacement of the riprap, areas of exposed geotextile, and overall condition of the drainages. The drainages will also be inspected for signs of debris, branches or silt accumulations that may prevent free drainages.

Approximately 400 linear feet of coconut-fiber blanket was placed along the southwest side of the removal area within an area sloping to the northwest (Figure 2). The coconut fiber blanket is intended to provide temporary erosion control, until vegetation becomes established, and therefore is intended to decompose over time. The blanket will be observed for any movement relative to the original placement and for damage by tears or undercutting. The area will also be observed for runoff silt and debris accumulation. The overall conditions will be noted in the field forms and photographs will be taken to

document the layout and condition of the coconut-fiber blanket. In addition, the vegetation in the area of the blanket placement will be observed and documented. Any variations in the vegetation from adjacent revegetated areas will be noted.

Straw wattles were placed for erosion control over approximately 1,000 linear feet along the northwest boundary of the removal area (Figure 2). In addition, straw wattles were placed on a low-gradient slope in three locations in an area near the northwest end of the removal area (Figure 2). The straw wattles are intended to provide temporary erosion control, until vegetation becomes established, and therefore are intended to decompose over time. The wattles were placed perpendicular to the topographic slope. The wattles will be inspected for damage, movement or other significant changes and recorded on the appropriate field forms.

Prior to the construction activities performed in 2002, silt fencing was placed along the northwest boundary of the removal area. Similar to the straw wattles and coconut-fiber blanket, the silt fencing is intended to provide temporary erosion control, until the vegetation becomes established. The entire length of silt fencing, estimated to be approximately 200 feet, will be visually inspected. The integrity of the fence and fence stakes/posts will be observed as well as any signs of sediment or debris buildup. All locations of damage or debris will be recorded on the relevant field forms.

### **2.3.3 Erosion**

Indications of significant Site erosion, or erosion from other areas that results in deposition of material on the Site, will be noted on the relevant inspection form provided in Appendix A. Other items to be noted during inspections include signs of ponding areas that lack vegetation, rills, channelization, or soil sloughing in areas that are not within part of the Site constructed erosion controls. The specific areas to observe for signs of erosion in the recreational areas include the steeper gradient areas, and the areas adjacent to erosion controls.

### **2.3.4 Access Control to the Site**

Access controls apply to both the residential and recreational areas and are discussed in Section 2.2.4. The exception is Area 3 located along USFS Road 205 which does not have any access controls because it is situated on public lands administered by the USFS (Drawing 6240-C20).

## **2.4 Stream Bank Stabilization**

Several areas of eroded stream bank along Montezuma Creek and Unnamed Creek were regraded and stabilized with log abutments and rocks during the removal action. Additionally, after consultation with the land owner and EPA, previously excavated portions of Powerhouse Flume were infilled and streamflow was re-routed to the original entrance location into the adjacent wetland (Drawing 6240-C22). The disturbed sites at both of these areas were seeded with the same seed mixture used in the recreational and residential areas. Willow cuttings were also planted at each of the repaired sites at Montezuma Creek. Erosion control was provided by the hand-application of straw at Montezuma Creek and by a straw blower at Unnamed Creek.

Inspections will be conducted in the spring and the late summer or fall (Table 2-1). As the stabilized areas are relatively small, inspections of newly stabilized stream banks will be qualitative rather than quantitative. Inspections will continue on a semi-annual basis for two years or until it has been demonstrated that the qualitative criteria (e.g. stream bank stabilization/plant establishment) have been achieved. During subsequent years, inspections will be conducted annually in the fall. The reduced frequency of inspections would be contingent on the performance of the stabilized areas. The semi-annual and annual inspections may be supplemented as necessary following a major storm or flood event. For each area to be monitored, a permanent photo point will be established from which to qualitatively follow the development of the vegetation community over time. The selected site should afford a clear view of the stabilized area and should be semi-permanently marked in the field. Sites should be consecutively numbered starting at the farthest upstream site.

Inspection and maintenance reports will be completed for each creek inspected. Form 4 will be used for inspection of Unnamed Creek/Powerhouse Flume and Form 5 will be used for inspection of Montezuma Creek (Appendix A). Streambank stabilization inspections will be performed at the frequency and duration shown on Table 2-1.

### 3.0 MAINTENANCE AND CONTINGENCY PLANS

#### 3.1 Recreational Areas

Periodic Site inspections will ensure that repair of disturbed areas within recreational removal areas is implemented in a timely manner. Areas where germination of seeded species was incomplete or where growth is sparse will require attention. Additionally, areas of significant erosion will require repair and reseeding.

Site monitoring inspections will determine the success of revegetation efforts. If, after two consecutive years, the required percent vegetation cover has not been met, the affected areas of the Site will be selectively amended, if necessary, and re-seeded. If the areas are small (i.e., less than ¼ acre), they will be hand-seeded and raked. Augmentation of vegetation in larger areas will be performed by tilling and re-seeding the area using tractor-mounted equipment. Unless otherwise stated, seeding rates will be the same as per the original specifications. The application rate of soil amendments, if needed, will be determined based on existing soil agronomic conditions.

The presence of invasive species on revegetation sites will be addressed on a case-by-case basis. Small numbers of invading species (e.g., dalmatian toadflax) are to be expected. Hand-pulling of invasives can be used effectively in removing small numbers of unwanted species. However, should the presence of invading species be deemed excessive by a site inspection representative, chemical or mechanical control may be necessary. Mechanical control may include, in extreme cases where chemical control or mowing operations fail to reduce the population of invasive species, tillage and reseeding of the area.

Should site monitoring reveal that herbivory is preventing or impeding revegetation of the site, control measures will be needed. This would include fencing to exclude herbivores, chemical repellents, devices to frighten or otherwise deter herbivores, or other methods to reduce the presence of herbivores.

In the event of major flooding in the recreational areas that create significant displacement of existing riprap or other control devices, and that produces extensive erosion, additional repair activities will be required. Such activities would involve the repair of erosion rills and gullies with compacted granular materials and re-placement of erosion control devices. Re-seeding would then be performed for

the portion of the site impacted by flooding. This extreme scenario is, however, not likely because of the flood diversion and control facilities constructed at the upstream Tailings Piles Area.

### **3.2 Residential Areas**

The maintenance procedures for the residential areas would be the same as those described above for the recreational areas. When facilities and access roads with driveways are constructed in the residential areas, design and construction of such facilities will need to be performed to reduce drainage impacts to the removal areas within the Depositional Area and as approved by the EPA. This will likely require the use of additional erosion-control devices or vegetation, or the installation of drainage facilities to divert runoff flows to adjacent drainage ways. Any such measures that are required as a result of residential development would be implemented by the property owner/developer.

### **3.3 Stream Bank Areas**

Should representatives performing the Site inspections conclude that action is needed to rectify existing or imminent stream bank stabilization failures or severe erosion, necessary repairs will be performed. Such areas are to be repaired per the original technical specifications for the Depositional Area removal action. Repaired areas will be re-seeded with the appropriate seed mixture and straw will be re-applied for erosion control. Incomplete or low ground cover of seeded vegetation will be amended, if necessary, and re-seeded with the appropriate seed mixture and will then be re-mulched with straw. Excessive movement of log structures/rootwads will be stabilized and/or repaired as needed to maintain stream bank integrity.

Noxious weed infestations will be treated by either manually pulling of plants or by spraying with an appropriate herbicide. Chemicals used for treatment of weedy species will be determined on a case-by-case basis by inspection personnel.

## **4.0 INSPECTION AND MAINTENANCE REPORTING PROCEDURES**

The reporting procedures for the Depositional Area following the required inspections include completion of field documentation and final reporting. The field documentation will include completion of the field forms provided in Appendix A and relevant field notes, maps or sketches and photographs. The majority, if not all field documentation will occur during the Site visit. Both the field documentation and the final reporting will be compiled into a summary report and submitted to EPA and other stakeholders.

### **4.1 Inspection and Maintenance Field Documentation**

At a minimum, the following will be performed for inspection and maintenance field documentation in the residential, recreational, and stream bank repair areas:

- Completion of field forms provided in Appendix A;
- Photographic documentation of the Site using a time-dated digital camera; and
- Field notes made on a Site map of all the areas inspected.

The field notes will also include data regarding vegetative cover that will be collected in accordance with the SOP presented in Appendix B.

### **4.2 Inspection and Maintenance Reporting**

An inspection and maintenance summary report will be prepared following each inspection. This report will document the observations and findings and recommend maintenance actions to be taken, if any. In the event that the inspection results in no significant findings, or required repairs or actions, during the first inspection of a season, a brief summary letter will be prepared and submitted to the EPA. All other relevant detailed inspection information may be held and submitted in one annual report, following the second scheduled inspection of that year.

In the event that minor maintenance actions are identified as necessary during the inspection, those actions will be documented in the report. If any follow-up maintenance or repairs are required at the Site,

those actions will be documented in a letter report, or in a more detailed format, as necessary. In the event a large storm event or flooding occurs, a supplementary inspection will be required that will warrant a separate summary letter report.

The inspection and maintenance report will include, but is not limited to, the following general information:

- Short summary of inspection, specifically dates, time, personnel, and weather;
- Record of any maintenance activities, performed during inspection as minor maintenance requirements, or contingency plans;
- Detailed description of any required future maintenance or repairs;
- Summary of areas that may require additional inspection and/or documentation during the next planned inspection;
- Completed forms provided in Appendix A, and if not required for inspection, a statement in the report or on the forms regarding reasons for exclusion;
- Necessary maps indicating findings, or areas of concern, including field sketches; and
- Representative photographs, preferably taken from similar locations of prior inspections, with appropriate references and notations.

## 5.0 REFERENCES

- MFG, Inc., (MFG, 2000). Talache Mine Tailings Site Tailings Piles Area Removal Action 100 Percent Design Report. Prepared for St. Joe Minerals Corporation and Monarch Greenback LLC. April 17, 2000.
- MFG, Inc., (MFG, 2002a). Talache Mine Tailings Site Depositional Area Removal Action Design Report, Atlanta, Idaho. Prepared for St. Joe Minerals Corporation and Monarch Greenback, LLC. July 2002.
- MFG, Inc., (MFG, 2002b). Talache Mine Tailings Site Addendum – Depositional Area Removal Action Design Report, Atlanta, Idaho. Prepared for the St. Joe Minerals Corporation and Monarch Greenback, LLC. September 2002.
- MFG, Inc., (MFG, 2003). Construction Completion Report Depositional Area, Talache Mine Tailings Site, Atlanta, Idaho. Prepared for St. Joe Minerals Corporation and Monarch Greenback, LLC. March 2003.
- U.S. EPA, 1990. Policy on Management of Post-Removal Site Control, U.S. Department of Commerce National Technical Information Service (PB91-921326), Washington, D.C.
- U.S. EPA, 2001. Talache Mine Tailings Site, Statement of Work (SOW) of Action Memorandum for Depositional Area. December, 2001.
- U.S. EPA, 2002. Talache Mine Tailings Site, Administrative Order on Consent (AOC) for Depositional Area, June 20, 2002.
- U.S. Federal Register, 2003. Code of Federal Regulations 40 CFR, Chapter I, Part 300.415 Removal Action, Part (K) Removal Actions Pursuant to Section 106 or 122 of CERCLA.

## **TABLES**

**Table 2-1  
Inspection and Recording Frequency  
Depositional Area**

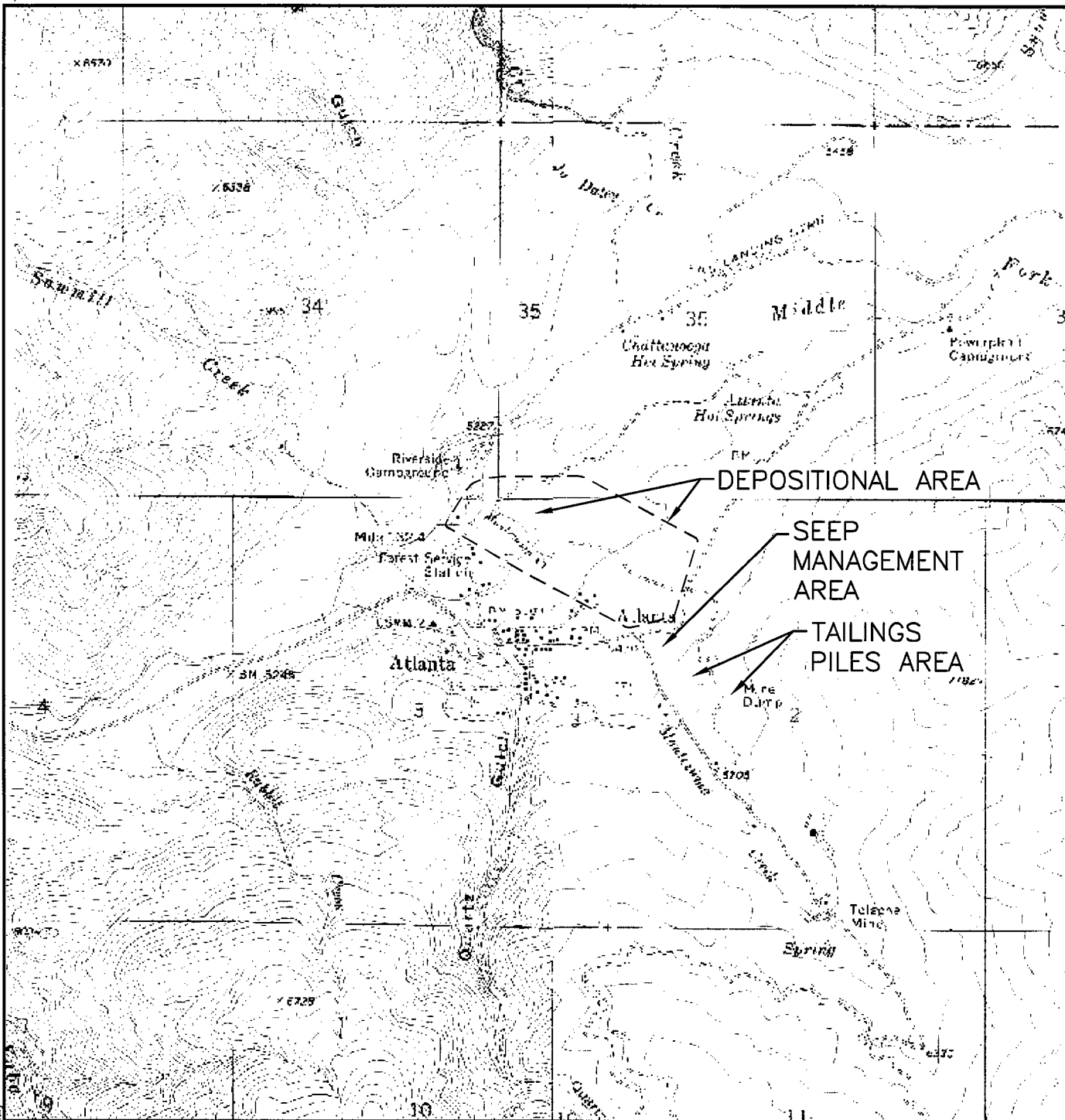
Item*	Frequency	
	First Two Years	Long Term
<b>Form 1</b> - Residential Areas - Barrier and Vegetative Cover, Erosion Controls and Erosion	Semi-annually	Annually years 3-7, every 5 years thereafter
<b>Form 2</b> - Residential Areas - Lot 5 Barrier with Visual Marker and Vegetative Cover	Semi-annually	Annually years 3-7, every 5 years thereafter
<b>Form 3</b> - Recreational Areas - Vegetative Cover, Erosion Controls and Erosion	Semi-annually	Annually years 3-7, every 5 years thereafter
<b>Form 4</b> - Streambank Stabilization - Unnamed Creek	Semi-annually	Annually years 3-7, every 5 years thereafter
<b>Form 5</b> - Streambank Stabilization - Montezuma Creek Adjacent to Depositional Area	Semi-annually	Annually years 3-7, every 5 years thereafter

**\* Forms are provided in Appendix A.**

Note: 1) In addition to regularly scheduled inspections, inspections of drainage facilities and structures should be made after major storm events and after significant seismic events, and following local forest fires, significant upgradient logging or land development that may impact the closures.

2) If vegetation is not well established after two years, inspections will continue at a semi-annual frequency until vegetation success is achieved.

## FIGURES



**REFERENCE:**

-USGS 7.5 MIN. QUADRANGLE MAP, ATLANTA WEST AND ATLANTA EAST, IDAHO, 1972.

N



SCALE



2000

0

2000 FEET

**TALACHE MINE TAILINGS SITE  
DEPOSITIONAL AREA  
POST-REMOVAL SITE-CONTROL PLAN**

FIGURE 1

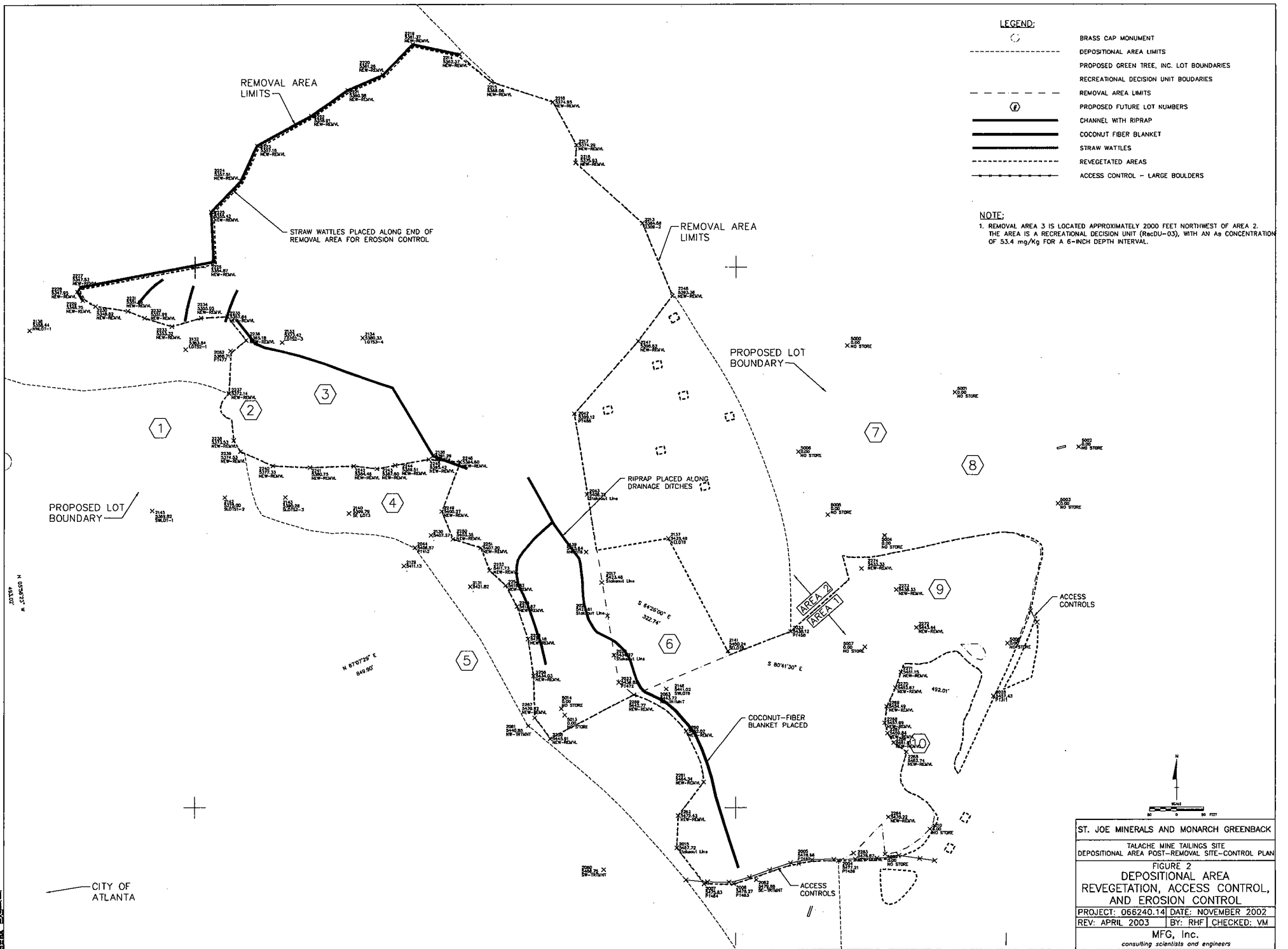
**VICINITY MAP**

PROJECT: 6240.18 DATE: APRIL 2003

REV: BY: RHF CHECKED: JR/BH

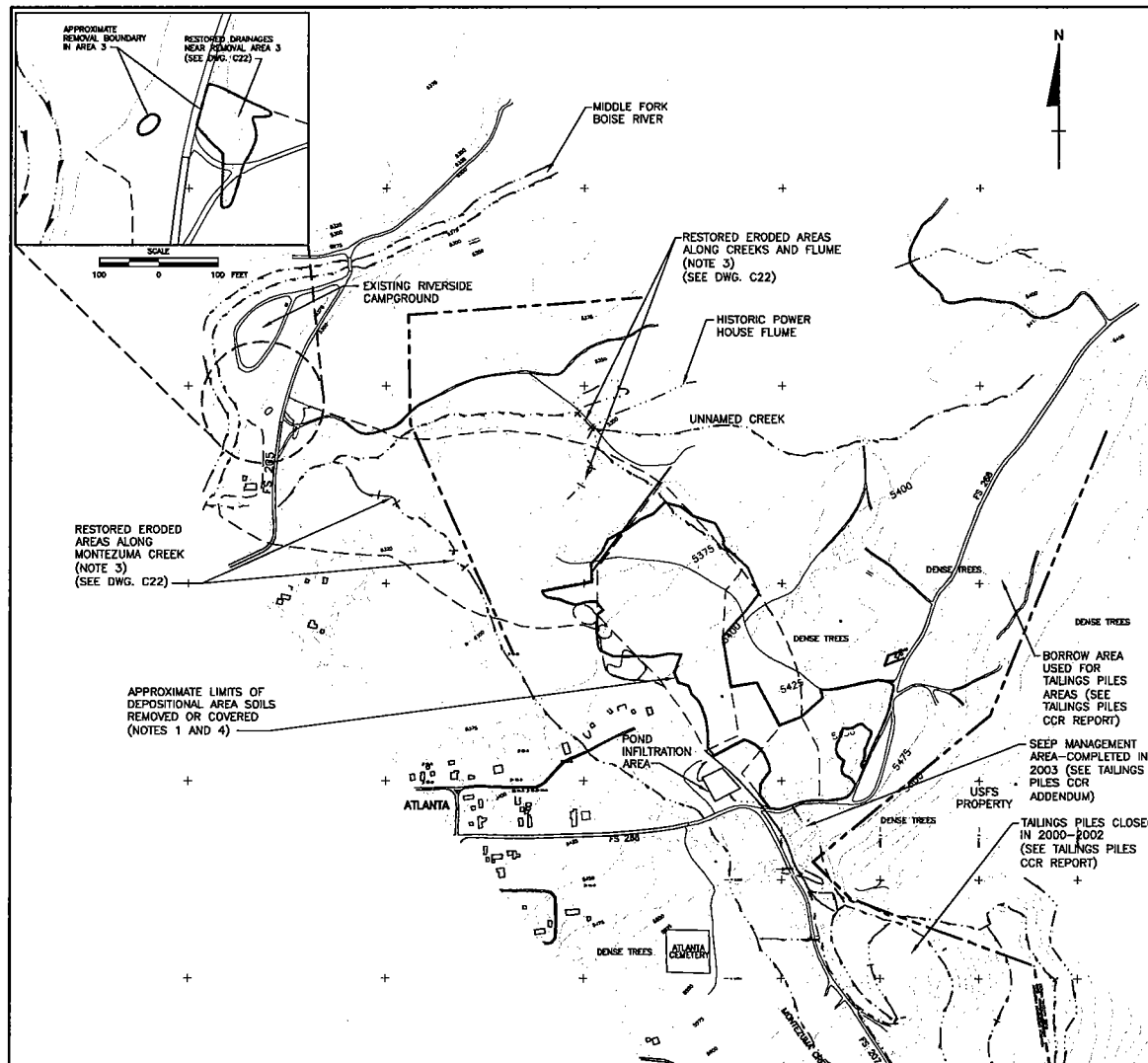
**MFG, Inc.**

consulting scientists and engineers



## **AS-BUILT DRAWINGS**

SCD: 6240-87.dwg D:\6240\ 6240 34x22 11/20/04 2:10 pm  
 Plot Date: 11/20/04  
 Plot Name: 2:10 mm  
 Plot Date: 11/20/04



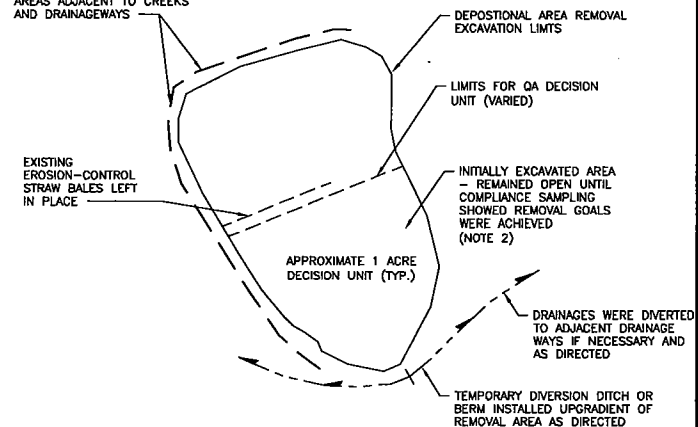
# LEGEND:

- APPROXIMATE LIMITS OF PROPOSED TAILINGS REMOVAL AREA (NOTE 1)
- APPROXIMATE LIMITS OF DEPOSITIONAL AREA
- APPROXIMATE LIMITS OF FINAL TAILINGS REMOVAL AREA
- RIVERS AND STREAMS
- APPROXIMATE PROPERTY LINE
- ===== FS 207 FOREST SERVICE ROAD

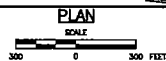
## NOTES:

1. APPROXIMATE LOCATIONS OF FEATURES AND DEPOSITIONAL AREA ARE SHOWN. LIMITS OF DEPOSITIONAL AREA REMOVALS WERE SURVEYED AND STAKED IN THE FIELD PRIOR TO CONSTRUCTION.
2. APPROXIMATE PROPERTY LINES ARE SHOWN. SEE FIGURE 1 FOR FINAL REMOVAL AREA BOUNDARIES WITH DECISION UNITS AND RELEVANT DATA. ONLY SEGMENTS RELEVANT TO REMOVAL ACTION ARE SHOWN.
3. ERODED AREAS ALONG POWER HOUSE FLUME AND MONTEZUMA CREEK WERE STAKED IN THE FIELD PRIOR TO CONSTRUCTION, RESTORED AND REVEGETATED. SEE DWG. C22.
4. TAILINGS WERE REMOVED FROM ACCESSIBLE AREAS IN THE DEPOSITIONAL AREA AS VISUALLY DETERMINED AND AS DIRECTED. AREAS WITHIN EXISTING TREES (LARGER THAN 4" DIA.), SOFT/WET AREAS OR OTHER AREAS NOT EASILY ACCESSIBLE HAVE A 6-INCH CLEAN SOIL COVER PLACED, AS DIRECTED.

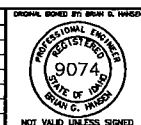
TEMPORARY SILT FENCE OR STRAW BALES WERE INSTALLED ON DOWN GRADIENT SIDE OF REMOVAL AREAS ADJACENT TO CREEKS AND DRAINAGEWAYS



TYPICAL DEPOSITIONAL AREA REMOVAL PLAN  
 NOT TO SCALE



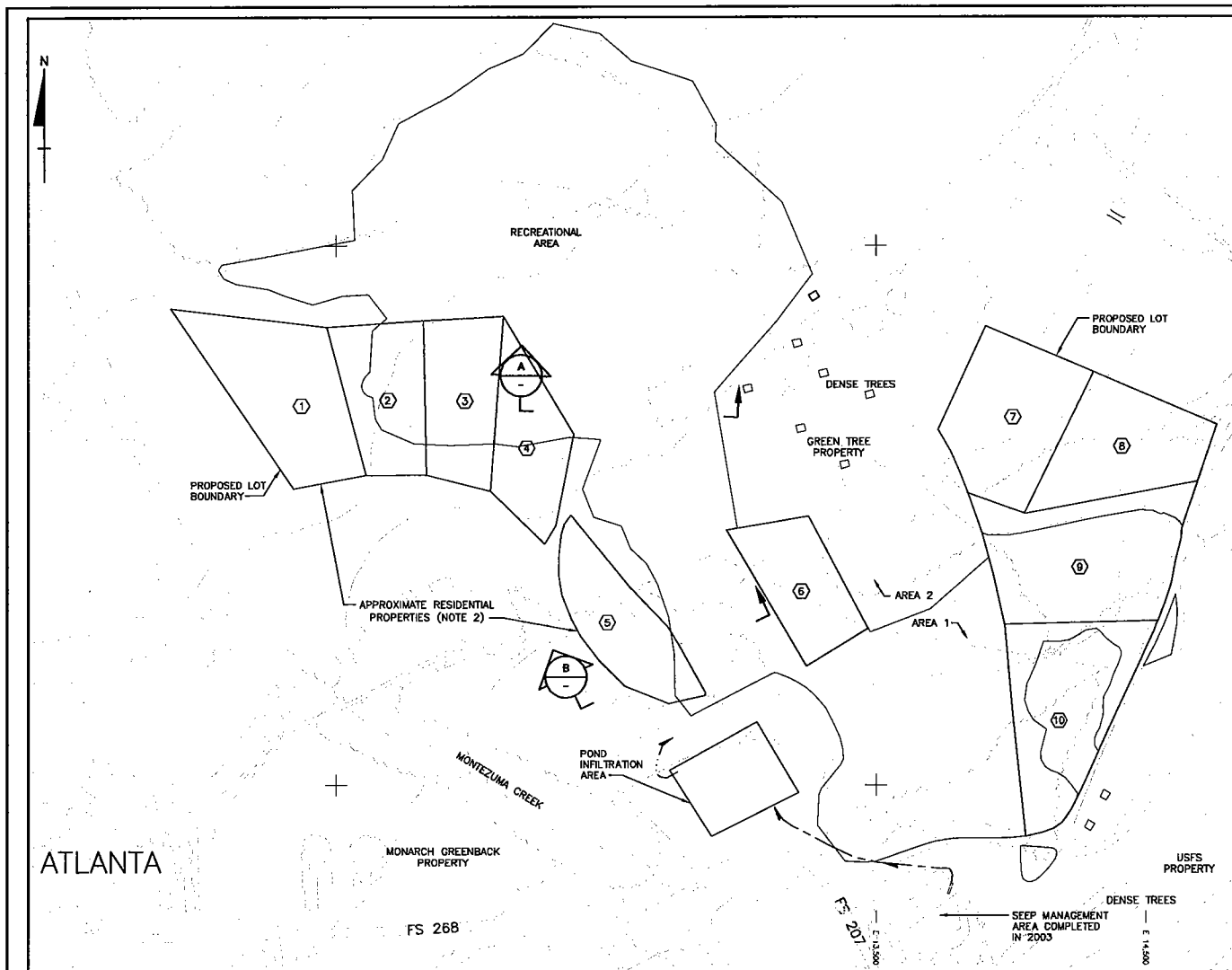
REFERENCE	NO.	REVISIONS	BY	DATE	NO.	REVISIONS	BY	DATE
HUBBLE DEPOSITIONAL AREA PLAN, SHEET 1, JULY 2002.								
					4	FINAL AS-BUILT	JHR	7/04
					3	AS-BUILT	JLB	3/03
					2	ISSUE FOR 2002 CONSTRUCTION	JHR	7/02
					1	ISSUE FOR 2002 DESIGN REPORT	JHR	6/02
					0	ISSUE FOR REVIEW	BCH	5/02



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 DESIGNED BY: PRN  
 DRAWN BY: SCG  
 CHECKED BY: JHR  
 APPROVED BY: BCH  
 FILE NAME: D:\6240\6240-87.DWG

**ST. JOE MINERALS AND MONARCH GREENBACK**  
**TALACHE MINE TAILINGS PILES SITE**  
**DEPOSITIONAL AREA REMOVAL PLAN**  
 DATE MAY 2002 DWG. NO. 6240-C20 REVISION 4

5240-6240-89.dwg D:\6240\6240-89.dwg 11/30/04 2:24 pm  
Plotted by: JHR  
Plot date: 11/26/04



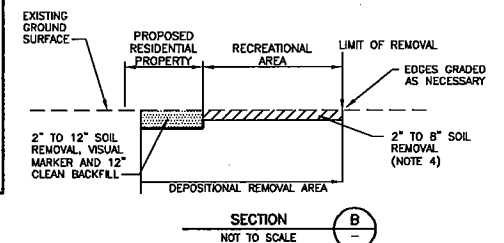
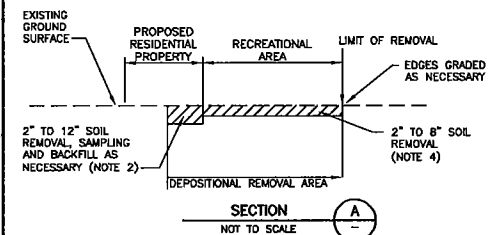
PLAN  
SCALE  
100 0 100 FEET

#### LEGEND:

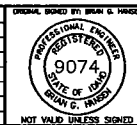
- APPROXIMATE RESIDENTIAL PROPERTY LINES  
REMOVAL GOAL = 36 mg/Kg ARSENIC
- APPROXIMATE PROPERTY LINES
- RESIDENTIAL AREA REMOVALS (NOTE 4)
  - RECREATIONAL AREA REMOVALS (NOTE 4)
  - RESIDENTIAL LOT WITH 12-INCH BARRIER AND VISUAL MARKER
  - VISUALLY IDENTIFIED TAILINGS REMOVAL AREAS

#### NOTES:

- APPROXIMATE PROPERTY LINES AND DEPOSITIONAL AREA REMOVALS WERE SURVEYED AND FIELD STAKED PRIOR TO CONSTRUCTION BY COMPANY'S REPRESENTATIVE. SEE FINAL HUBBLE SURVEY PLAN SHEET STK.
- VISUALLY IDENTIFIABLE TAILINGS WERE REMOVED FOLLOWED BY FIELD XRF SCREENING (NON-COMPLIANCE TESTING), ADDITIONAL REMOVALS AS NECESSARY.
- CLEAN BACKFILL WAS PLACED FOR DRAINAGE AS NEEDED FOLLOWING SUCCESS OF COMPLIANCE SAMPLING. IN THE EVENT COMPLIANCE SAMPLING WAS NOT SUCCESSFUL, A VISUAL MARKER WAS PLACED WITH 12-INCHES OF CLEAN BACKFILL.
- SEE FIGURE 1 FOR FINAL REMOVAL AREA BOUNDARIES WITH DECISION UNITS AND RELEVANT DATA.
- THE BURNED SLASH PILE AREA WAS SEEDED AND MULCHED IN 2003 AT THE DEPOSITIONAL AREA.



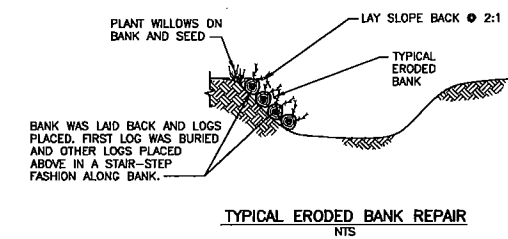
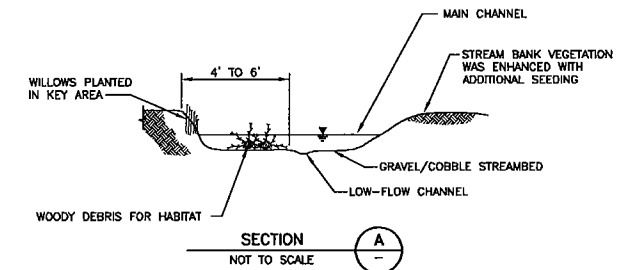
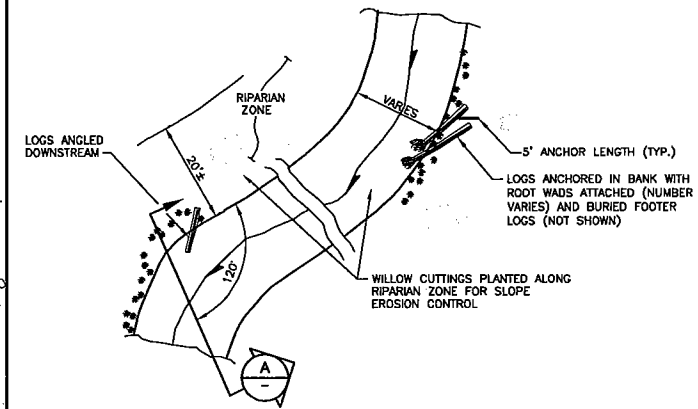
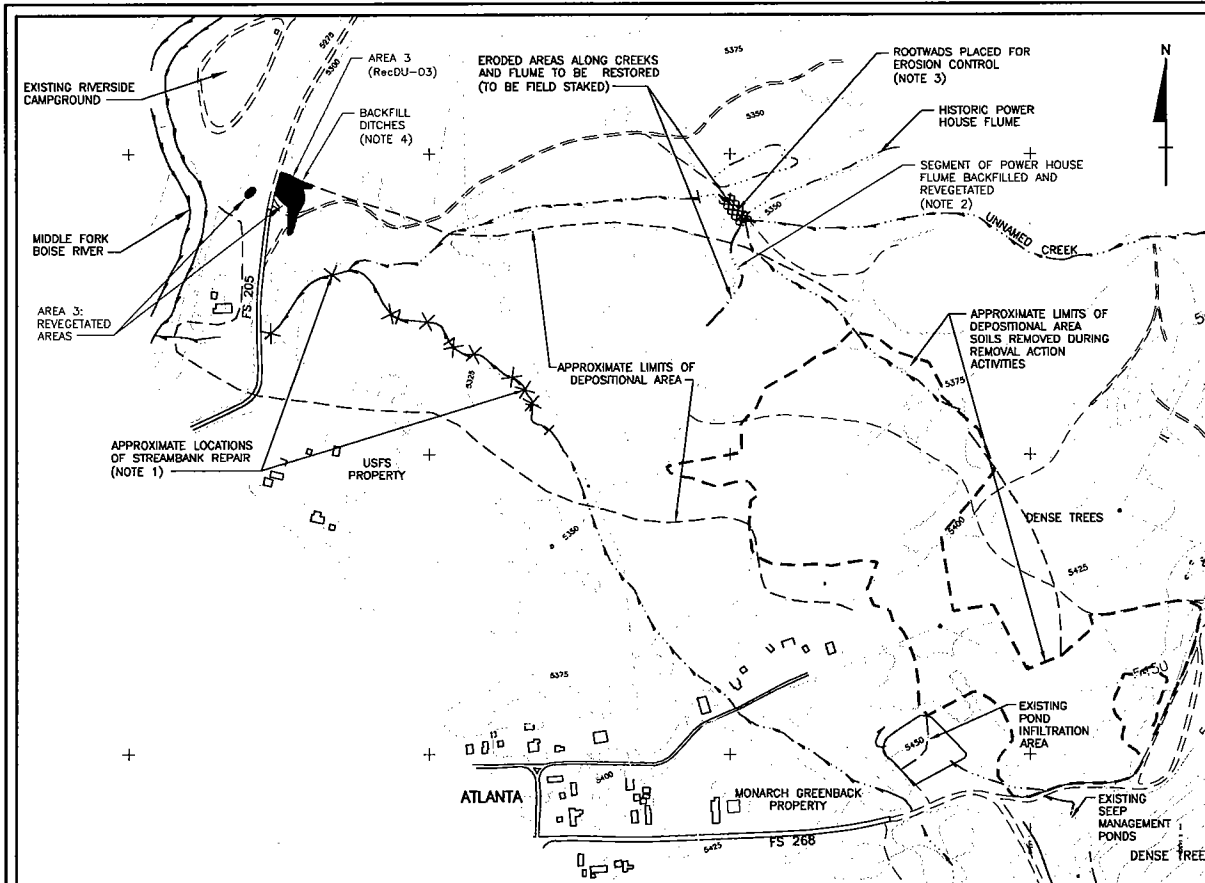
REFERENCE	NO.	REVISIONS	BY	DATE	NO.	REVISIONS	BY	DATE
HUBBLE DEPOSITIONAL AREA PLAN, SHEET STK, JULY 2002.								
					4	FINAL AS-BUILT	JHR	7/04
					3	AS-BUILT	JLB	3/03
					2	ISSUE FOR 2002 CONSTRUCTION	JHR	7/02
					1	ISSUE FOR 2002 DESIGN REPORT	JHR	6/02
					0	ISSUE FOR REVIEW	BGH	5/02



DESIGNED BY: BRIAN G. VOSSEN  
NOT VALID UNLESS SIGNED

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DESIGNED BY: PRN  
DRAWN BY: RHF  
CHECKED BY: JHR  
APPROVED BY: BGH  
FILE NAME: D:\6240\6240-89.DWG

**ST. JOE MINERALS AND MONARCH GREENBACK  
TALACHE MINE TAILINGS PILES SITE  
DEPOSITIONAL AREA REMOVAL PLAN  
AT RESIDENTIAL AREAS**  
DATE: MAY 2002  
DWG. NO. 6240-C21  
REVISION 4



- NOTES:**
1. NINE ERODED AREAS ALONG STREAMBANK WERE REPAIRED AT LOCATIONS SHOWN. AREAS WERE IDENTIFIED AND STAKED IN THE FIELD IN CONSULTATION WITH EPA, REPAIRED AND REVEGETATED. TOTAL LINEAR CHANNEL LENGTH REPAIR  $\approx$  230'.
  2. A SEGMENT OF POWER HOUSE FLUME, APPROXIMATELY 500' IN LENGTH, WAS BACKFILLED WITH ORIGINALLY REMOVED SOIL AND REVEGETATED.
  3. APPROXIMATELY 12 ROOTWADS WERE PLACED AT THE ENTRY OF WETLAND (~8' WIDE).
  4. DITCHES IN AREA 3 WERE BACKFILLED WITH EXISTING BERM MATERIAL FROM PREVIOUS EXCAVATIONS.

**LEGEND:**  
 - - - - - REVEGETATED REMOVAL AREAS

S:\6240-92.dwg D:\6240\ 5240 3/4/02 11:50/04 2:29 pm  
 Plot Date: 3/30/04  
 Plot Scale: 1"=200'

REFERENCE	NO.	REVISIONS	BY	DATE	NO.	REVISIONS	BY	DATE
					4	FINAL AS-BUILT	JHR	7/04
					3	AS-BUILT	JLB	3/03
					2	ISSUE FOR 2002 CONSTRUCTION	JHR	7/02
					1	ISSUE FOR DESIGN REPORT	BCH	6/02
					0	ISSUE FOR REVIEW	BCH	5/02

NOT VALID UNLESS SIGNED

**MFG, Inc.**  
 consulting scientists and engineers

DESIGNED BY: PRM  
 DRAWN BY: RHF  
 CHECKED BY: JHR  
 APPROVED BY: BCH

**ST. JOE MINERALS AND MONARCH GREENBACK**  
**TALACHE MINE TAILINGS PILES SITE**  
**STREAM BANK EROSION CONTROL-  
 PLAN & SECTIONS**

FILE NAME: D:\6240\5240-92.DWG

DATE: MAY 2002

DWG. NO. 6240-C22

REVISION 4

## **APPENDICES**

## **APPENDIX A**

### **Inspection and Maintenance Forms**

**Form 1**  
**Inspection and Maintenance**  
**Depositional Area**  
**Residential Area - Vegetative Cover, Erosion Controls and Erosion**

<b>DATE/TIME:</b>		<b>WEATHER CONDITIONS:</b>	
<b>PERSONNEL:</b>		<b>TEMPERATURE:</b>	
	<b>CONDITION</b>	<b>COMMENTS</b> (Maintenance/Repair Needed)	<b>MAINTENANCE PROCEDURE</b>
<b>BARRIER AND VEGETATIVE COVER</b>			
General condition			
Barrier			
Vegetative growth			
Vegetative coverage			
Ponding			
Other			
<b>EROSION CONTROL</b>			
General condition			
Riprap			
Silt Fencing			
Coconut-Fiber Blanket			
Straw Wattles			
Other			
<b>EROSION</b>			
General condition			
Erosion			
Ponding			
Sloughing			
Debris			
Other			
<b>GENERAL SITE</b>			
Access Controls			
Land Use			
Other			

**Form 2**  
**Inspection and Maintenance**  
**Depositional Area**  
**Residential Area - Lot 5 Barrier with Visual Marker and Vegetative Cover**

<b>DATE/TIME:</b>		<b>WEATHER CONDITIONS:</b>	
<b>PERSONNEL:</b>		<b>TEMPERATURE:</b>	
	<b>CONDITION</b>	<b>COMMENTS</b> (Maintenance/Repair Needed)	<b>MAINTENANCE PROCEDURE</b>
<b>BARRIER</b>			
General condition			
Barrier			
Erosion			
Ponding			
Land Use			
Other			
<b>VISUAL MARKER</b>			
Visual Marker			
Depth to Visual Marker - #1			
Depth to Visual Marker - #2			
Depth to Visual Marker - #3			
Other			
<b>VEGETATIVE COVER</b>			
Vegetative Growth			
Vegetative Cover			
Other			

**Form 3**  
**Inspection and Maintenance**  
**Depositional Area**  
**Recreational Areas - Vegetative Cover, Erosion Controls and Erosion**

<b>DATE/TIME:</b>		<b>WEATHER CONDITIONS:</b>	
<b>PERSONNEL:</b>		<b>TEMPERATURE:</b>	
	<b>CONDITION</b>	<b>COMMENTS</b> (Maintenance/Repair Needed)	<b>MAINTENANCE PROCEDURE</b>
<b>BARRIER AND VEGETATIVE COVER</b>			
General condition			
Barrier			
Vegetative Growth			
Vegetative Coverage			
Ponding			
Other			
<b>EROSION CONTROLS</b>			
General condition			
Riprap			
Silt Fencing			
Conconut-Fiber Blanket			
Straw Wattles			
Other			
<b>EROSION</b>			
General condition			
Erosion			
Ponding			
Sloughing			
Other			

**Form 4**  
**Inspection and Maintenance**  
**Streambank Stabilization**  
**Unnamed Creek**

<b>DATE/TIME:</b>		<b>WEATHER CONDITIONS:</b>	
<b>PERSONNEL:</b>		<b>TEMPERATURE:</b>	
<b>SITE #:</b>	<b>CONDITION</b>	<b>COMMENTS</b> (Maintenance/Repair Needed)	<b>MAINTENANCE PROCEDURE</b>
General condition			
Erosion			
Sedimentation			
Ponding			
Stability			
Vegetative growth			
Vegetative coverage			
Root wads			
Noxious weeds			
Other			

**Form 5**  
**Inspection and Maintenance**  
**Streambank Stabilization**  
**Montezuma Creek**

<b>DATE/TIME:</b>		<b>WEATHER CONDITIONS:</b>	
<b>PERSONNEL:</b>		<b>TEMPERATURE:</b>	
<b>SITE #:</b>	<b>CONDITION</b>	<b>COMMENTS</b> (Maintenance/Repair Needed)	<b>MAINTENANCE PROCEDURE</b>
General condition			
Erosion			
Sedimentation			
Stability			
Vegetative growth			
Vegetative coverage			
Shrub survival			
Log structures			
Noxious weeds			
Other			

## **APPENDIX B**

### **Standard Operating Procedure for Vegetation Cover Measurement**

## **STANDARD OPERATING PROCEDURE FOR VEGETATION COVER MEASUREMENT**

### **1.0 INTRODUCTION**

This Standard Operating Procedure (SOP) describes the protocols to be followed while conducting measurements of vegetative cover. The procedures presented herein are intended to be of general use. As the site work progresses, and if warranted, appropriate revisions will be made and approved in writing by the Project Manager.

### **2.0 VEGETATION COVER MEASUREMENTS**

#### **2.1 SITE LAYOUT**

This section applies to the general layout and adaptation of the actual site for conducting vegetation cover measurements. Vegetation cover measurements will be conducted only on areas of interest larger than ¼ acre.

The outline of the barrier or revegetation area identified for cover measurements will be mapped and the area divided into ½-acre subareas. One measurement transect will be randomly located in the approximate center of each subarea.

#### **2.2 DATA COLLECTION**

The vegetative cover will be determined using the point-intercept method (Bonham, C.D. 1989. *Measurements for Terrestrial Vegetation*. John Wiley & Sons, NY. 338 p.). The basic premise of the point-intercept method is that plant cover within a given area can be determined by recording the number of points that actually hit plants if an infinite number of points are placed in a two-dimensional area. The point-intercept method consists of extending a transect line a predetermined distance through a vegetated area judged to represent the given community type or seeded area. The type of material (e.g., vegetation biomass, soil, rock, etc.) is recorded at each assigned point, or intercept, along the transect line. The total number of vegetative "hits" is divided by the total possible hits to obtain the percent vegetative cover.

Vegetative cover measurements will be taken using 2 transects per acre in revegetated areas. Each transect will be 50 meters long and will be randomly placed. The type of material observed under each 1 meter interval of the transect will be recorded. Thus 100 points per acre will be recorded.

Revegetation success standards shall be judged by the percent ground cover of the existing vegetation and litter, and by the percent of species represented by the original seed mixture. Ground cover is defined as the area of ground surface covered by the combination of the aerial portion of the vegetation plus the litter that is produced naturally by the existing on-site vegetation. This measurement excludes rock surface areas. The combination of plant canopy cover and litter shall be at least 70% of that of a reference area of adjacent undisturbed native vegetation.

Vegetation quality criteria will include the abundance of species occurrence on the site, vegetation condition, and the trend of the vegetative community. Species abundance describes the number of times a particular species is encountered in a given number of sample points, or the number of hits in the point-intercept line transect, and is expressed as a percentage. Vegetation condition describes the general overall appearance of the health of the plants and will be expressed as good, fair, or poor. Trend indicates the trajectory of the vegetative community and will be expressed as increasing, static, or decreasing. Vegetation quality criteria shall be proclaimed successful if at least 50% of the species counted in plant canopy cover measurements are from the original seed mixture, the condition is fair or good, and the trend is static or increasing. Additionally, not more than 5% of the plant canopy cover shall be represented by noxious weeds.

### **3.0 DOCUMENTATION**

#### **3.1 DAILY FIELD RECORD**

An experienced field representative will document the activities of each day of field work chronologically in accordance with the procedures contained in the QA/QC Plan. Entries in the field log book will include:

- A. Mapped outline of the barrier/revegetation area of interest (larger than  $\frac{1}{4}$ -acre), including  $\frac{1}{2}$ -acre divisions;
- B. Location and length of each transect, along with sampling interval length;
- C. General observations of plant cover throughout the barrier/revegetation area, relative to the transect sampling area; and
- D. Percent cover calculation for the barrier/revegetation area.

#### **3.2 PERCENT COVER CALCULATIONS**

Percent vegetative cover will be determined for each barrier/revegetation area by the following procedure:

- A. For each transect, sum the vegetative "hits" to develop a total number of hits per transect. Also, sum the number of observations (i.e., potential hits) per transect.
- B. For all transects combined, divide the grand total of hits by the grand total of observations (potential hits) and multiply by 100 to obtain the percent vegetative cover for the barrier/revegetation area.